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6. ASPHERIC LENSES

[redacted] will investigate the design of aspheric lenses and the methods of producing the aspheric surfaces of such lenses. The design will be applied to projection lenses for rear-projection viewers, allowing a maximum of light transmission, minimizing aberrations and distortions, and improving the resolution over the entire format of the area being viewed.

The project also includes research into those improvements in performance that could be obtained by using projection lenses designed for use with highly monochromatic light, and the preparation of a lens evaluation manual.

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7. LINEAR PHASOLVER

The system concept for a linear phasolver has been successfully demonstrated and this highly reliable measuring technique, superior to any we now have, will be made available for incorporation into future comparators.

Almost all large-format comparators now in use rely on either a precision lead screw with shaft rotation encoders or the Ferranti

Moire fringe techniques. The phasolver is a precision device which accurately converts minute increments of mechanical motion into large electrical phase shift information. This information can be easily processed and digitized by electronic equipment for a highly accurate readout.

8. VIRTUAL (DIRECT) IMAGE VIEWER

VG K-0040
The virtual image viewer (Figure 101) is capable of presenting the eye directly with ultra-high-resolution aerial images which can be viewed simultaneously with both eyes at magnifications of 5x (60 lines per mm) or 50x (200 lines per mm) in a 3.5- by 3.5-inch pupil

field. Because this viewer is not limited in resolution by a diffusing screen and because it can deliver the image directly to the human eye, its performance is comparable in quality to advanced microscope viewing.

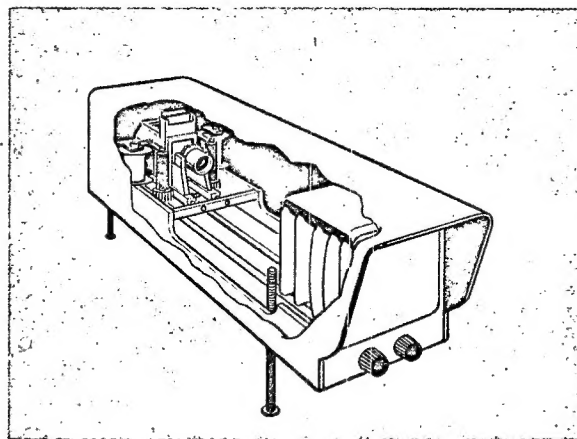


FIGURE 101. VIRTUAL (DIRECT) IMAGE VIEWER.

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